A6 Control block

Part number **103862**

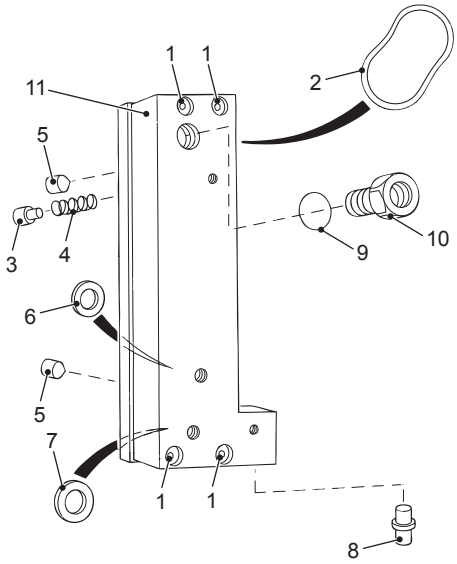
Original instructions.

Software and documentation available at:

http://cadfiles.desouttertools.com

No login/password required.

1. SPARE PARTS



Item	Description	Part No	Qty	High	Medium	Low
				Wear		
11	A6 simple control block	381193	1			
	O-RING KIT	**2050542783**		X		
2	O-Ring 18.77x1.78	-	1			
6	O-Ring 10.6x2.4	-	1			
7	O-Ring 14.6x2.4	-	1			
9	O-Ring 0.56"x0.07"	-	1			
	SMALL PARTS KIT	**2050542793**			X	
1	Screw M5x30	-	2			
3	Return pin	-	1			
4	Valve spring	-	1			
5	Dowel pin	-	2			
8	Plug end stop for A6 block	-	1			
10	Adaptor	-	1			

2. SIMPLE CONTROL VALVE

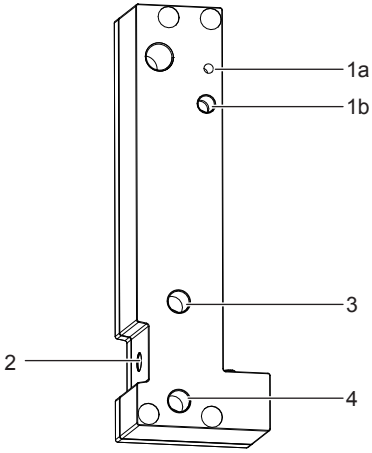


Figure 4

1a Position for 'SW1' proximity switch, using actuating pin

1b Position for 'SW1' proximity switch, using sleeve on extension tube

2 Position for 'SW2' proximity switch, detects a signal when the tool has reached depth

3 Retract Air port, tapped 1/8 in. BSP

4 Advance Air port, tapped 1/8 in. BSP

This control valve block module is used when the tool is to be controlled remotely.

Both (1a) and (1b) detects a signal when the tool is at the datum position.

External circuitry will be required to control the speed of advance and retract feeds.

When using simple control block replace screw (68) with extended head screw (383983).

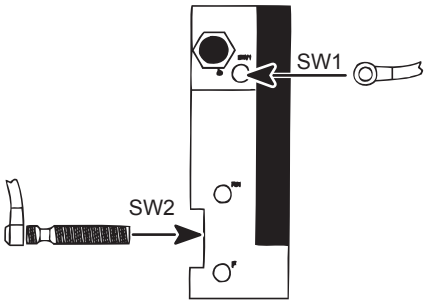
3. EXTERNAL CONTROL

The A6 control block is used where external circuitry controls the tool - the AFD can be treated like a cylinder with the following characteristics.

Tool Type	Forward Feed (F)	Retract Feed (RN air only)	Cylinder Type
AFDE200	Air	Air	Double Acting
AFDE400/ 410/ 600/ 610/ 620	Air	Spring	Spring Return
AFDE400/ 410/ 600/ 610/ 620 with Air Return Port Used	Air	Spring + Air Or Air Only	Double Acting
AFD205/ 215	Air	Air	Double Acting
AFD415	Air	Spring	Spring Return
AFD425	Air	Spring	Spring Return
AFD425 with Air Return Port Used	Air	Spring + Air Or Air Only	Double Acting
AFD625	Air	Spring	Spring Return
AFD625 with Air Return Port Used	Air	Spring + Air Or Air Only	Double Acting

On tools with air motor the main air inlet must have air to it to supply the motor.

This is NOT used on electric tools or external air motor drive AFD425 or AFD625.



As it sounds this block is a much simplified one with few of the features of the Full Feature A1 Block. It contains the following:

3.1. Pneumatic Control (F, RN)

There are 2 ports for the pneumatic control, the feed port (F) for feeding the tool forward and the retract port (RN) for returning the tool to the datum position for the AFDE200 and AFD205/ 215.

Both ports are 1/8" BSP with adaptors supplied to 1/8" NPT.

3.2. Main Air Inlet (⊙)

The main air inlet ⊙ (1/4" BSP or NPT) must be connected to an air supply for the AFD tools as this air supply feeds the motor apart from AFD425 and AFD625. Not required on AFDE tools to de-activate an air lock and allow the tool to feed.

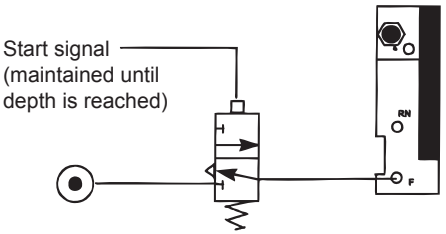
3.3. Electrical Signal Ports (SW1, SW2)

Both these ports are for proximity switches. SW1 is used to sense that the tool is at the datum position and SW2 for depth.

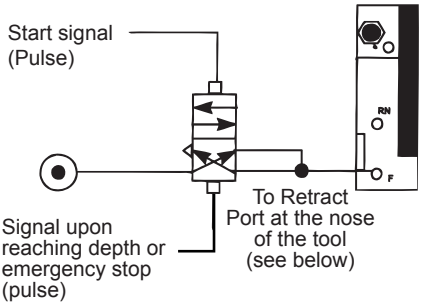
The threads are M8 x 1.0.

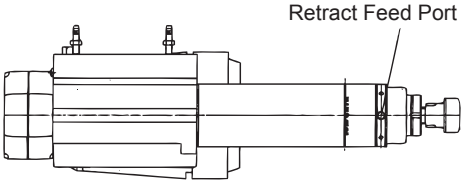
Detailed below are basic control circuits for the A6 control block - signalling of the valve would normally be from A PLC based on the signals from the SW1 and SW2 proximity switches.

AFDE400/410, AFDE600/ 610/ 620, AFD425, AFD625

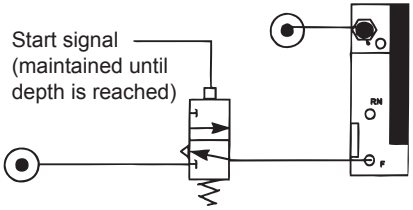


AFDE400/ 410/ 600/ 610/ 620 with Air Return/ Retract

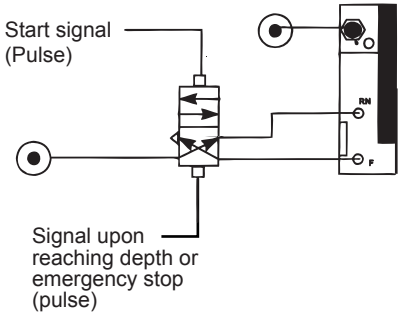




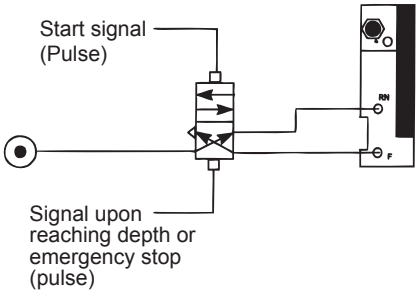
AFD415



AFD205/ 215



AFDE200



3.4. Fitting an Interface Kit to an A6,A7 and AS Control Block

To fit the proximity switches.

With the tool at the datum position fit a proximity switch in SW1 by gently rotating clockwise until a some resistance is felt.

Rotate the switch approximately one turn.

3.5. Kit Types for A6/7/8 blocks

Code	Part No.	Control block	S.V.	Proximity switches
C3	104002	A6/A7 (M8)	-	2 x M8 PNP + Cables
C5	104842	A6/A7 (M8)	-	2 x M8 NPN + Cables

S.V.: Solenoid valves.

4. CONNECTIONS AND SPECIFICATIONS FOR THE SOLENOID VALVES AND PROXIMITY SWITCHES

Proximity switches	
Brown	+24V DC
Black	Output
Blue	0V

Proximity Switch Specifications

Type	Operating voltage	Voltage drop	Rated operating current	Operating temperature
M8 NPN NO	10-30V	≤2.5V	250mA	-25 to 70 °C
M8 PNP NC	10-30V	≤2.5V	250mA	-25 to 70 °C
The output is short circuit protected (pulsed). After elimination of the short circuit the switch is ready again for operating.				

Solenoid Valve Specifications

Solenoid valve type	Rated voltage	Rated power
NO	24 V	2 W
NC	24 V	1 W

4.1. Definition of PNP and NPN, N.O, N.C.

PNP	Is the most common. It is also known as positive switching, true high or sourcing. It is the action of a switch that connects one end of a load to the positive side of a D.C. power supply.
NPN	Is the less common. It is also known as negative switching, true low or sinking. It is the action of a switch that connects one end of a load to the negative side of a D.C. power supply.
N.O.	Is a switch output which is open when no target is present or is de-energized and which changes to the closed state when a target is present or it is energized.
N.C.	Is a switch output which is closed when no target is present or is de-energized and which changes to the open state when a target is present or it is energized.

More Than Productivity